Original Article

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Frequency, Risk Factors and Complications in Pregnancies Associated with Placenta Praevia

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ABSTRACT

Objective: To evaluate the frequency of placenta praevia, risk factors, and complications, both maternal and fetal associated with placenta praevia.

Study Design: Cross-sectional and analytical study.

Place and Duration of Study: Study was conducted in Department of Obstetrics and Gynaecology, Unit-I, Ghulam Muhammad Maher Medical College Hospital Sukkur from April 2010 to March 2012

Materials and Methods: In this study 75 cases of pregnancy beyond 24 weeks of gestation complicated by pacenta praevia were included. Total number of deliveries was 5041 and patients presented with placenta praevia were 75.

Results: Patients with placenta praevia were 75 giving an incidence of 1.5%. Among 75 cases 67 cases were non-booked, 71 cases came in emergency, out of which 8 were referred cases. The gestational age at the time of admission was < 37 weeks in 57% of cases. The maximum number of patients 28 (37%) were between 30-40 years and above, while 44 (58.7%) women were multiparous, 41 (54.7%) cases had at least one or more gynaecol / obstet procedure before the presnt pregnancy. Incidence of placenta praevia was significantly high in patients with previous caesarean section (6%) than overall incidence of %. Regarding complication 7 %) cases ended up in caesarean hysterectomy due to postpartum haemorrhage and morbid adherent placenta. Intra operative haemorrhage was found in 11 (14.7%) cases and 2-4 units of blood transfusion were required in 52 (69%) of cases. Pre-maturity was found commonest cause of perinatal mortality about 87%.

Conclusion: The improvement in social, nutritional and educational status of women, provision of antenatal care and ultrasonography can help in diagnosing and in decreasing the complication rate. One should anticipate placenta praevia in all patients with previous caesarean section and ultrasound scan should be used for its diagnosis specially for placental localization in patients with history of previous caesarean section.

Key Words: Placenta praevia, Caesarean Section, Risk factors.

INTRODUCTION

The primary goal of obstetric care is the safe motherhood and to make childbirth as pleasant and fulfilling an experience as possible for the woman and her partner.

Obstetric haemorrhage is the biggest enemy of the mother and her developing baby especially in developing countries. Antepartum haemorrhage carries a significant maternal and foetal risk. Antepartum haemorrhage is defined as vaginal bleeding from 24 weeks to the delivery of the baby.[1]

Placenta previa is one of the major issue of antepartum haemorrhage.[2] Antepartum haemorrhage due to placenta previa is an important complication due to associated risk of significant haemorrhage to both mother and fetus.[3] Placenta previa is a placenta that is implanted entirely or in part in lower uterine segment[2,4,5]. This condition occurs in 0.4 to 0.8% of pregnancies[5]. The frequency of placenta previa at the term of delivery average 1 in 200 births i.e. 0.5%[6]. Low implantation is observed in 28% of pregnancies before 24 weeks, 18% after 24 weeks but at term it is only 3%[4]. Variation in reported incidence from 0.1 to 1% due to different methods and timing of diagnosis[7].

The etiology of placenta previa is unknown but various association have been identified. Risk factor for placenta previa includes previous uterine scar, smoking, maternal age over 35 years, grand multiparity, recurrent abortion. Low socioeconomic status, infertility treatment and male gender.[8,9,10,11]

Placenta previa is associated with considerable maternal and fetal morbidity.[12] A population based retrospective cohort study in the province of Nova Scotia, Canada shows maternal complications which include hysterectomy antepartum haemorrhage as well as blood transfusion, septicemia and thrombophelebitis.[13] In addition to haemorrhagic complication, placenta previa can be associated with abruption placenta, placenta praevia totalis can be complicated with pulmonary embolism during caesarean section.[14] Previous caesarean section is a risk factor for morbidly adherent placenta (Accreta) in placenta praevia patients. Placenta praevia accreta is associated with high maternal morbidity.[8]

Placenta praevia is a common obstetrical problem with serious low Apgar Score, congenital abnormalities, prematurity and maternal morbidity.[15,16]

Respiratory distress syndrome and anaemia are also neonatal complication.[16]

Salihu HM et al, concluded that placenta praevia triples the rate of neonatal mortality which is mediated mainly through preterm birth.[17]

Pregnancies that are diagnosed with placenta praevia must be monitored carefully especially as they approach term.[18]

The purpose of the study is to determine the frequency of placenta praevia associated pregnancies and its relation to different predisposing factors and maternal and fetal complications with a view to draw conclusion, aimed at improving our management.

MATERIALS AND METHODS

This cross sectional, analytical study was conducted in Obstetric and Gynaecology Unit-I, GMC Teaching Hospital Sukkur during a period of two years form April 2010 to March 2012. This study included 75 patients

Sampling techniques: Purposive non-probability

Inclusion Criteria: All pregnant women presented with bleeding per vaginim after 24 weeks diagnosed on ultrasound as placenta praevia.

Exclusion Criteria: i) Abruptio placenta, ii) Vasa praevia, iii) Local causes, cervicitis cervical erosion, cervical carcinoma, vaginal trauma, vaginal infection and heavy show.

Data collection procedures: 75 cases were admitted in our ward through outpatient department, emergency or referred by private clinics. Patients were included after 24 weeks of gestational age with history of bleeding per vaginum diagnosed on ultrasound as placenta praevia. A reaearch proforma was specially designed for this study on admission. Patients were questioned about amount of bleeding period of gestation, labour pains and previous bleeding episodes. The possible associated risk factors for placenta praevia like age, parity, previous caesarean section, miscarriage, history of evacuation of uterus were recorded. Maternal and fetal well being were assessed by general physical, per abdominal examination, ultrasound and cardiotocography. Ultrasound were carried out in all patients to know the exact placental location and fetal well being. Management were planned according to diagnosis, period of gestation, general condition of patients and condition of fetuses were subjected to expectant management or immediate delivery. In stable patients with pre-mature fetuses conservative treatment were practiced till term (37 weeks) and then decided for mode of delivery according to type of placenta praevia. Minor degree of placenta praevia Type-I, Type-II, anterior trial for vaginal delivery.

Elective caesarean section were planned for Type-II posterior, Type-II and Type-IV placenta praevia. Those patients who bleed heavily and continuously emergency caesarean section were done. Caesarean hysterectomy was done in patients with morbid placental adhesion and uncontrolled haemorrhage. All material and fetal complications were recorded on the proforma.

Data Analysis Procedure: The data was analyze3d through computer with the help of SPSS programme version 10. Relevant descriptive statistical, frequency, percentage computed for presentation of qualitative response. Variables like past history of caesarean section, Dilatation and curettage and evacuation of uterus, Type of placenta praevia, mode of delivery, maternal and fetal complications, etc. Chi square test was used for comparision of entire characteristics and quantitative variables like age, parity were represented by mean ± standard deviation and comparison of entire characteristics by applying student t. test of independent samples. Statistical significance was taken at $p<0.05$.

RESULTS

The number of deliveries beyond 24 weeks gestation during the study period were 5041 and 75 cases of placenta praevia were seen giving an incidence of 1.5 i.e. 15/1000 deliveries.

The 71 (94.7%) patients were admitted through emergency, out of which 8 cases were referred from different hospitals 4 cases were admitted through outpatient department. Regarding booking status out of 75 cases, only 8 (10.7%) cases were booked themselves in hospital. All cases were symptomatic at the time of admission from mild to heavy bleeding per vaginum.

Gestational age at the time of admission was less than 37 weeks in 43 (57%) patients which demonstrate the association of pre-term delivery with the placenta praevia associated pregnancies.

Advancing maternal age is associated with progressively elevated risk of placenta praevia. Moreover the maximum number of patients 28 (37%) were between 30-34 years old and 14 (18%) cases were 35 and more than 35 years old. While 5 (6.7%) of patients were less than 29 years old.

Relation to parity showed that a high proportion of patients with placenta praevia were multiparous 44 (58%) and 13 (17%) patients were grand multiparous, while nulliparous were 18 (24%) cases.

Review of past obstetrical / gynaecological procedures revealed that dilatation and curettage (unrelated to pregnancy) had been performed in 2 (2.7%) cases. Previous abortion and evacuation of uterus had occurred in 17 (22.7%) cases, history of lower segment caesarean section was found in 21 (28%) cases and myomectomy scar was found in 1 (1.3%) case. Analysis of the above result showed that majority (54%) of patients had at least one or more gynaecological procedures performed before the present pregnancy.

The total number of deliveries with history of previous caesarean section in the study period was 350 of the 350 cases. Placenta praevia was diagnosed in 21 cases giving an incidence of 6%, it showed that the incidence of placenta praevia was significantly higher in patients with previous caesarean section (6%) than overall incidence i.e. 1.5%.

Association of previous history of placenta praevia with placenta praevia was found in 5 cases. Moreover history of maternal smoking could not be adequately.

Regarding the choice of management 67 (89%) cases were actively managed and among them 8 (10.6%) of the patients having major degree placenta praevia was at 37 weeks or above.

Expectant management was given in 8 (10.6%) patients. Regarding the relative frequency of type of placenta praevia of the 1.5%, the major degree of placenta praevia was 0.8% while 0.7% was type-I and II.

(Table 1) showed the complications in pregnancies associated with placenta praevia. Fetal malformation (2.5%) at time of delivery was found in our study (Breech in 12%, transverse lie 8% and oblique lie (5.3%). Mode of delivery was caesarean section in 59 (78.7%) of cases while vaginal delivery was possible only in 21%. The mal-presentation also contribute to the increase in caesarean section. There was evidence of abruptio placenta in the form of retroplacental clots in 2.6% of patients. 14% of patients with placenta praevia had intraoperative haemorrhage due to morbid placental adhesion, extension of tears and laceration, uterine atony and bleeding from placental bed. 7 (9.3%) of patients had postpartum haemorrhage, out of which 4 patients need caesarean hysterectomy and 3 managed conservatively.

7 patients underwent caesarean hysterectomy, an incidence of 1 in 11. Among these 3 patients had major degree placenta praevia and placenta increta while the other 4 had major degree placenta praevia and postpartum haemorrhage due to uterine atony. 3 women had placenta increta, of these 2 had a history of previous caesarean section, while one woman had no such history thus raising the risk of placenta increta from 1.5% in patients with scarred uterus and placenta praevia (Table 2).

2-4 units of blood transfusion were required in 69% of cases due to more intra operative or postpartum blood loss, while in 9.3% of more than 4 units of blood transfused in cases of caesarean hysterectomy due to placenta increta and postpartum haemorrhage (Table 8).

Post operatively 89% of women were found to be anaemic, either they were due to blood loss or already anaemic pre-operatively (Table 1).

9.3% of women develop wound infection, they were operated in emergency and were anaemic. 9.3 % of cases also developed urinary tract infection. There was no maternal mortality.

51 babies were bore in a healthy state while 14 (18.7%) neonatal death and 10 (13.3%) still birth occurred, for an overall perinatal death of 32% (Table 3). The mean gestational age of still born babies was 29 weeks, while mean gestational age of neonatal death was 32 weeks (Table 3).

The total number of pre-mature babies were 40 out of 24 perinatal death 21 were due to pre-maturity giving an overall incidence of 87.5% due to pre-maturity.

Table No. 1: Complications in Pregnancy associated with Placenta Previa

Complication	Number of Cases	%age
Fetal Malpresentation	19	25.3%
Caesarean Section	59	78.7%
Intra operative Hemorrhage	11	14.7%
Abruptio Placenta	2	2.7%
Morbid adhered Placenta	3	4.0%
Postpartum Hemorrhage	7	9.3%
Cesarean hysterectomy	7	9.3%
Number of Blood Transfusion (2-4 units)	52 cases	69.3%
Anemia	67	89.3%
Wound infection	7	9.3%
Urinary Tract Infection	7	9.3%

Table No.2: Risk of Placenta/Accreta with Previous Scar

	Patients with Placenta Previa	Placenta Previa/ Accreta	Percentage
Unscarred Uterus	54	0	00.0%
Scarred Uterus	21	3	14.3
Total	75	3	14.3%

Table No.3: Status of Babies

Status of Babies	Number of babies	Mean gestational age
Alive	51 (68.0%)	35.0 ± 5.3
Still Birth	10 (13.3%)	29.0 ± 1.9
Neonatal death	14 (18.7%)	32.6 ± 3.9
Total	75 (100.0%)	33.8 ± 5.1

DISCUSSION

The incidence of placenta praevia in our study was 1.5% (1.5 in 100) i.e. 15/1000 deliveries it is higher than the reported incidence which is 1 in 200 births, average 0.5%[7]. The reason being that this is a tertiary car hospital and most of the normal deliveries take place outside hospital and received most of referral and emergency cases.

From our study it appears that implantation over the internal os is not just a chance happening. A high incidence of placenta praevia would be expected if

implantationwerre random rather than preferentially in the fundus.

Our study showed that risk of association of development of praevia with certain risk factors which are in consistent with some studies.

In our study analysis of age showed that the frequency of placenta praevia increases across the entire maternal age which is consistent with the study done by faiz AS[10] in 2003, these also shows the unsual association of advance maternal age with placenta praevia development.

The usual association with multiparity was also present in our study i.e. multi parous women has many times (44 + 13 = 57) 76% risk of having placenta praevia as compared to nulliparous [18] cases, which are in consistent with the studies conducted by Faiz et al[10], Tuzovic et al[11] and Abu Heija et al in 1999[12] which showed that increase number of pregnancies associated with more endometrial damage having risk of placenta praevia development.

Previous caesarean section was common in our study which was 28%. Ashraf R4 and Abu Heija12 also found higher association of placenta praevia in women with previous caesarean section in their studies. Previous caesarean section increase the risk of placenta praevia (6%) as compared to overall incidence (1.5%) of placenta praevia (Table 3) previous caesarean section is associated with endometrial damage which is responsible for placenta praevia development. Prior history of abortion and evacuation of uterus is also an important risk factor for development of placenta praevia. In our study 22% of cases had history of evacuation of uterus the results are in consistent with studies conducted by Faiz AS and Tuzovic et al.[10,11]. This reflects the endometrial damage secondary to sharp curettage because in more setup sharp curettage is mostly used instead of suction curettage. Thus accounting for higher incidence ofplacenta praevia. Regarding the complications in pregnancies associated with placenta praevia. Fetal malpresentation found common in our study. The associated mal-presentation with placenta praevia increases the number of caesarean section deliveries even in cases where placenta praevia is marginal.

Regarding mode of delivery this study shows caesarean section is significantly increased (78%) in women with placenta praevia, which is inconsistent with study conducted by Nasreen F[6]. Haemorrhage is the most threatening complication of placenta praevia which is not only antepartum but also intraoperative and postpartum.

Intra operative haemorrhage and postpartum haemorrhage also found main complication in women with placenta praevia in our study. Crane JM[14] also found the same results in their studies, intra operative haemorrhage occurred due to morbid placenta adhesion, extension of tears and laceration, uterine atony and bleeding from placental bed. Postpartum haemorrhage occurred due to uterine atony and morbidity adherent placenta.

Women with complete placenta praevia had poor pregnancy outcome as they may require hysterectomy at the time of caesarean delivery. Our study found 9.3% of cases ended up in hysterectomy due to either morbid adhere placenta and postpartum haemorrhage. Dola CP[64] and Nasreen F[4] found the same results in their study.

In post operative complications i.e. Anaemia, urinary tract infection and wound infection, the anemia was the commonest complication in our study which was about 89%, it was either due to intra operative blood loss or postpartum haemorrhage. Fatima N[13] also found the same result in their study.

Pre-maturity due to placenta praevia account for increase in perinatal mortality[19]. in our study 87.5% of perinatal death were due to prematurity. In our study the mean gestational age was 33.5 ± 5.1.

In our study perinatal mortality was 32% which is quite high than study conducted by Crane JM et al[18]. this reflects that our hospital is tertiary care centre, most of patients are reffered cases from remote villages so by the time they reach the hospital intra uterine fetal demise occur due to heary blood loss (13.3% still born) accounting for high perinatal mortality.

CONCLUSION

It is concluded from our study that the frequency of placenta praevia is high in womwen with previous caesarean section, one should anticipate it in all patients with previous caesarean section and ultrasound scan should be used for its diagnosis specially for placental localization in patients with history of previous caesarean section. One should also anticipate adherent placenta praevia and chances of performing caesarean hysterectomy should also be kept in mind.

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